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EXAMINER

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/662,662
Filing Date: September 15, 2003
Appellant(s): MOLINA ET AL.

Michael J. Schmidt
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed July 20, 2006 appealing from the Office action mailed October 18, 2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

3,432,008	Henry-Biabaud	3-1969
4,624,346	Katz	11-1986
4,823,922	Ergun	4-1989

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1, 3-7, 10, 11 and 13-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,823,922 to Ergun in view of US 3,432,008 to Henry-Biabaud.

Re-claims 1, 3-7, 10, 11 and 14-17, Ergun teaches a shock absorber and shock absorber piston assembly, comprising: a tube 16 (or piston tube) forming a pressure chamber 32; a piston assembly 28 slidably engages the tube; a shock absorber piston having opposite faces; a plurality of fluid passages extending between the opposite faces,

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see figures 9, 10 and 22; a plurality of single direction valves attached to the piston, including: at least two single direction rebound valves and at least two single direction compression valves, the claim language broadly recites that each single direction rebound valve, and each single direction compression valve actuates at a different individually adjustable valve opening pressure, this language is broadly interpreted as merely requiring that each valve is capable of being individually adjusted to a different opening pressure, Ergun teaches that each valve is capable of being adjusted to a desired opening pressure, see column 5 lines 46-47, through modification of the pin and spring element, this is broadly interpreted by the examiner as providing motivation for adjusting each valve to actuate at a different individually adjustable rebound valve opening pressure and at a different individually adjustable compression valve opening pressure, thus providing a sequential valve opening operation as in the instant invention; a shock absorber fluid is in contact with the first and second face of the piston, each rebound valves controls a first direction fluid flow and each compression valve controls a second direction fluid flow. However, Ergun fails to teach the adjustable valves having the claimed structure.

Henry-Biabaud teaches a valve element for a shock absorber having a means of easily adjusting the opening pressure of the valve. The valve comprises: a pin having a threaded connection end (the end threaded with nut 19); a compressible device 17 (a coil spring) creates a preload for urging the valve into a closed position; a fastener 19 is threaded to the connection end, the fastener operably engages the compression device, the fastener comprises a threaded nut that is used to vary the preload, and thus the opening pressure; (claim 6) valve element 6 is provided with a bleed line 7, thus element 6 is

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broadly interpreted as a bleed disc; (claims 7 and 14) the flange portion of the nut 19 is interpreted as being a washer since it is functionally equivalent to a washer, the flange is located between the fastener and the spring, the portion of the valve that engages the seat 12 is interpreted as a valve plate, since upon engagement with the seat it will operably seal the fluid passage; (claim 15) the valve plate engages a land 12 adjacent to each fluid passage when in a closed position. It is further noted by the examiner that each valve unit in Henry-Biabaud comprises two valves 3 and 6, each opens at a different pressure, see column 2 lines 44-72 to column 3 lines 1-7.

It would have been obvious to one of ordinary skill in the art to have provided the piston assembly of Ergun with the adjustable valve unit taught by Henry-Biabaud, thus providing the artisan with the ability to easily vary the preload of the valve (by simply rotating the relevant nut) rather than having to modify parts as currently envisioned by Ergun (see column 5 lines 46-47). This would reduce the number of part required for assembly and thus reduce the cost of manufacturing the shock absorber apparatus.

Re-claim 12, the reservoir of Ergun contains gas, which will migrate through the fluid.

Re-claim 13, Ergun teaches that the damping fluid is a hydraulic fluid, hydraulic fluids commonly used in shock absorbers contain oil and are thus hydrocarbon based liquids.

Re-claim 18, the piston rod comprises a first end 12 adapted for connection to an automobile vehicle.

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Re-claim 19, Ergun teaches a tubular end 20 slidably disposed over the piston tube 16 and a freely extending end of the piston rod 36; and a second end fitting 12 fitting attached to the freely extending end of the piston rod for attachment to a vehicle.

4. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ergun in view of Henry-Biabaud as applied to claims 1 and 7 above, and further in view of US 4,596,321 to Harper et al.

Ergun as modified by Henry-Biabaud fail to teach using at least one shim disc between the waster and the spring to vary a preload of the spring. Harper et al. teach the use of a shim disc for varying a preload of a spring associated with a spring-biased valve. It would have been obvious to one of ordinary skill in the art to have utilized the teachings of Harper et al. regarding the use of shim disc when having to vary the preload of the valves in Ergun as modified by Henry-Biabaud, the shims would have provided a greater range of attainable preloads.

5. Claims 20, 21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ergun in view of Henry-Biabaud and in view of US 4,624,346 to Katz.

Re-claims 20 and 21, Ergun teaches a method to dampen a vehicle ride deflection, comprising: orienting at least two single direction rebound valves and at least two single direction compression valves in a piston, the valves are separated from each other. Ergun further teaches that the valves can be designed to actuate at different opening pressures to achieve a desired damping characteristic, see column 5 lines 46-47. However, Ergun fails to teach a rotatable nut used to adjust the sequential opening operation of the rebound and compression valves.

Henry-Biabaud teaches a compression and rebound valve having a nut for varying the opening pressure of the valve. It would have been obvious to one of ordinary skill in the art to have utilized the adjustable valve taught by Henry-Biabaud in the piston assembly of Ergun, thus providing the artisan with the ability to easily vary the preload of the valve (by simply rotating the nut 19) rather than having to modify parts as currently envisioned by Ergun (see column 5 lines 46-47). This would reduce the number of required parts for assembly, thus reducing the cost of manufacturing the piston and valve assembly.

Ergun as modified by Henry-Biabaud fail to teach having the rebound and compression valves open in a sequential manner. Katz teaches a method for damping a vehicle ride using a shock absorber with rebound and compression valves that open in a sequential order, see column 4 lines 9-16, wherein it is noted that some valve are weakly loaded while others are more strongly loaded. It would have been obvious to one of ordinary skill in the art to have utilized the teachings of Katz when having set the opening pressures of the valves in Ergun, thus providing a wide damping range for the shock absorber and improving the comfort level for the passengers in the vehicle.

Re-claim 23, the diameter of the fluid passage defined by the seat and the valve element is varied during operation, the degree of change is a consequence of the preload force on the spring.

6. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ergun in view of Henry-Biabaud and Katz as applied to claim 20 above, and further in view of US 4,596,321 to Harper et al.

Ergun as modified by Henry-Biabaud and Katz fail to teach shimming at least one of the compression and/or rebound valves. Harper et al. teach the use of shim disc for varying a preload of a spring associated with a spring-biased valve. It would have been obvious to one of ordinary skill in the art to have utilized the teachings of Harper et al. regarding the use of a shim disc when having to vary the preload of the valves in Ergun as modified by Henry-Biabaud and Katz, the shimming would have provided a greater range of attainable preloads.

(10) Response to Argument

The examiner has merely relied upon the cited section in Ergun to provide motivation for adjusting the opening pressure of the valve elements. As is clearly stated in the above rejection Henry-Biabaud teaches a valve element having the structural limitations recited in the instant claims, in addition Henry-Biabaud teaches each valve element having a main valve 3 and a secondary valve 6. Henry-Biabaud clearly teach in column 2 lines 44-46 that secondary valve 6 opens first when the speed of the piston exceeds a predetermined value, as set by the preload of the spring as controlled by the fastener 4. Main valve 3 will open once the piston speed becomes particularly high, see column 2 lines 66-72 to column 3 lines 1-2, as dependent upon the preload of spring 17 as set by fastener 19. It is believed that the combination of Ergun and Henry-Biabaud would reduce the number of pin and spring elements required to be kept on hand when having manufactured the shock absorbing apparatus of Ergun.

With regards to Ergun, in order to adjust the valve opening pressure one would have to disassemble the valve assembly and replace the spring and pin as necessary to

achieve the desired opening pressure. As such, one would be required to have on hand a large number of pins and springs of various sizes, in order to meet a variety of opening pressure values for the valves as might be requested by the consumer. By simply using the valve structure of Henry-Biabaud one can easily modify the opening pressure of the valve by rotating the relevant fastening member (the nut) and adjust the preload of the associated spring. As such the total number of parts required to be kept on hand would be reduced by utilizing the valve structure of Henry-Biabaud, by simply eliminating the need for keeping a wide variety of pins and springs in stock as envisioned in Ergun. Therefore, the combination of Ergun and Henry-Biabaud is viewed by the examiner as being obvious to one of ordinary skill in the art, since the overall costs of assembly would be reduced.

With regards to claim 20, Katz teaches a piston assembly having a plurality of rebound valve elements (i.e. 20 and 23) and a plurality of compression valve elements (i.e. 35 and 37). Valve elements 20 and 35 are more strongly loaded than valve elements 23 and 37, thus providing a sequential opening operation. This setup provides the damper assembly with the ability to effectively operate over a wide damping range, and provide maximum comfort for the passengers in the vehicle.

For the above reasons, it is believed that the rejections should be sustained.

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Respectfully submitted,

Thomas Williams

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9-21-06

Conferees:

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